Main Index

Group TOC

GROUP 35A

BASIC BRAKE SYSTEM

CONTENTS

Main Index
Group TOC

GENERAL INFORMATION

M2350000100848

FEATURES

Brake system with high reliability and durability have achieved distinguished braking performance.

BRAKING PERFORMANCE

- Brake booster with 9-inch variable amplification ratio mechanism by which greater braking force can be obtained with a less pedal pressure has been installed (with brake assist function).
- 14-inch disc brake is installed on the front wheels. <LS, VR>
- 15-inch disc brake is installed on the front wheels. <VR-X, RALLIART Version-R>
- 8-inch leading trailing type drum brake is installed on the rear wheels. <LS, VR>
- 14-inch disc brake is installed on the rear wheels. <VR-X, RALLIART Version-R>

STABILITY

- 4-wheel anti-lock braking system (4ABS) is adopted to prevent slipping caused by the vehicle wheels locking up, in order to maintain appropriate braking distance, and also to maintain vehicle stability and steering function.
- Electronic brake-force distribution (EBD) is adopted to maintain the maximum amount of rear braking force even when the vehicle's load is varied.
- Diagonal split (X-type) brake fluid line is adopted.
- Ventilated discs have been adopted to front brakes to improve anti-fading performance.
- A brake pedal retraction suppression structure that restrains the retraction of the brake pedal and reduces the shock to the feet of the driver in the event of a frontal collision has been adopted.

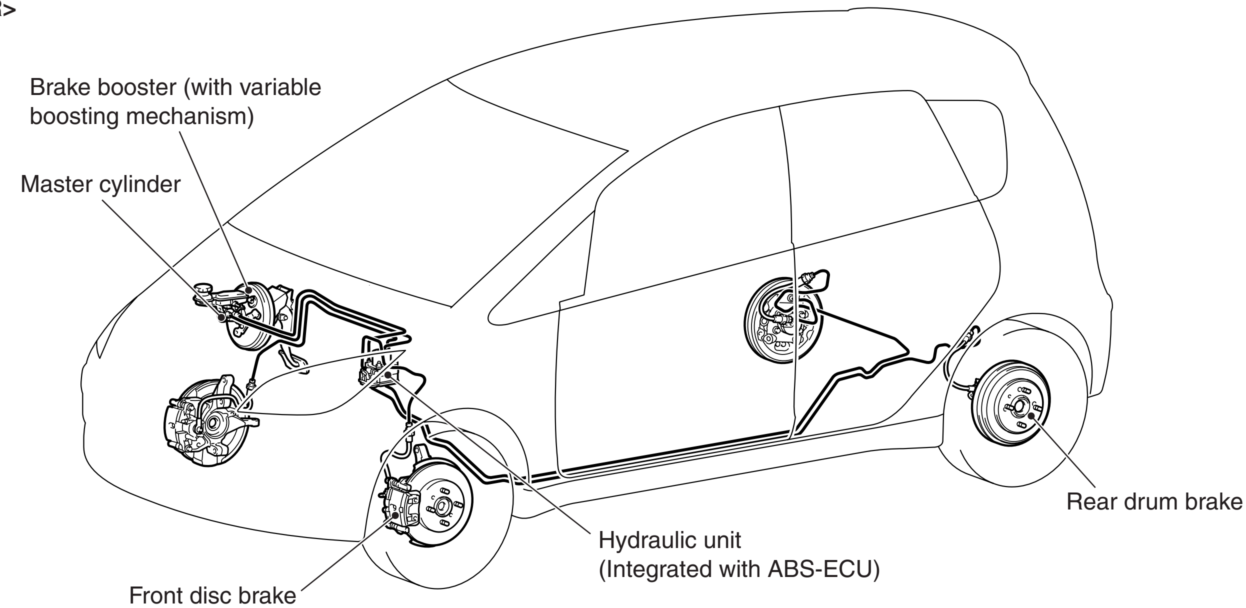
SERVICEABILITY

- Diagnosis function is adopted for the ABS system in order to make inspection easier.
- For the front disc brakes, brake disc separated front hub is adapted to make removal and installation easier.
- ABS-ECU and hydraulic unit have been integrated to make them more compact and lighter.

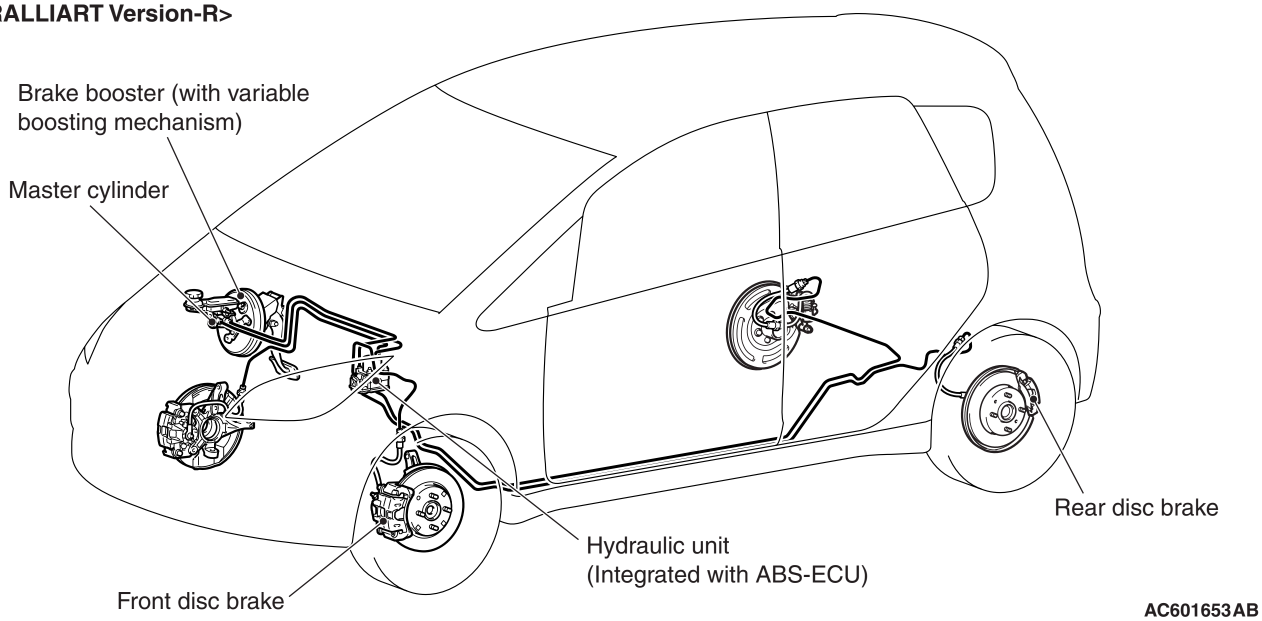
Main Index
Group TOC

CONFIGURATION DIAGRAM

<LS, VR>



<VR-X, RALLIART Version-R>



Main Index
Group TOC

SPECIFICATIONS

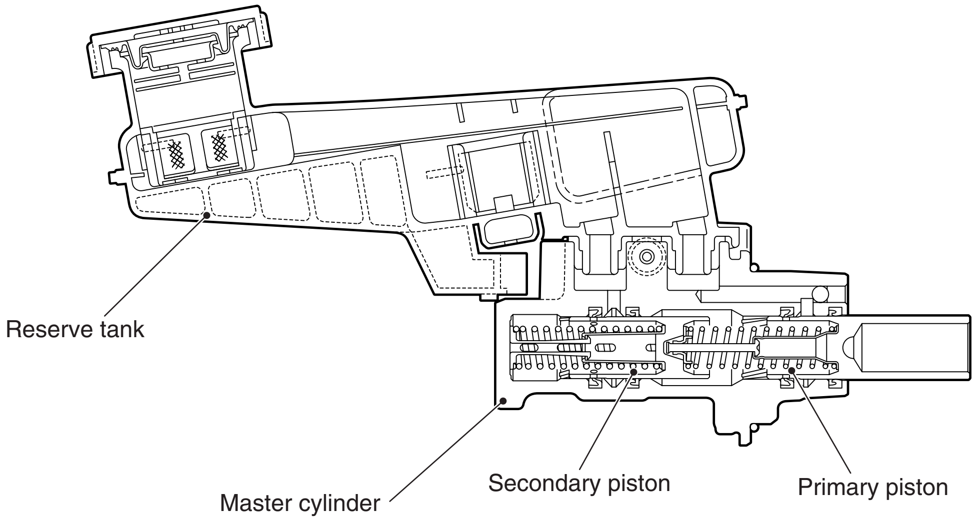
Item			Specifications
Master cylinder	Type		Tandem type
	I.D. mm	LS, VR	20.6
		VR-X	22.2
		RALLIART Version-R	23.8
Brake booster	Type		Vacuum type, single
	Effective dia. of power cylinder mm		230
	Boosting ratio	LS, VR, VR-X	6.0 (pedal pressure: 116 N) 7.0 (pedal pressure: 159 N)
		RALLIART Version-R	6.0 (pedal pressure: 87 N) 7.0 (pedal pressure: 125 N)
Rear wheel hydraulic control method			Electronic brake-force distribution (EBD)
Front brakes	Type	LS, VR	Floating caliper, 1 piston, ventilated disc (V4-S51)
		VR-X, RALLIART Version-R	Floating caliper, 1 piston, ventilated disc (V5-S54)
	Disc effective dia. × thickness mm	LS, VR	206 × 20
		VR-X	226 × 24
		RALLIART Version-R	232 × 25.8
	Cylinder I.D. mm	LS, VR	50.8
		VR-X, RALLIART Version-R	54.0
	Pad thickness mm	LS, VR, VR-X	10
		RALLIART Version-R	10.5
	Clearance adjustment		Automatic
Rear disc brakes <VR-X, RALLIART Version-R>	Type	VR-X	Floating caliper, 1 piston, solid disc (S4-S30P)
		RALLIART Version-R	Floating caliper, 1 piston, solid disc (S4-S34P)
	Disc effective dia. × thickness mm	VR-X	224 × 10
		RALLIART Version-R	200.6 × 10
	Cylinder I.D. mm	VR-X	30.2
		RALLIART Version-R	34.0
	Pad thickness mm	VR-X	9.5
		RALLIART Version-R	10.0
	Clearance adjustment		Automatic
Rear drum brakes <LS, VR>	Type		Leading trailing drum
	Drum I.D. mm		203
	Cylinder I.D. mm		19.0
	Lining thickness mm		4.0
	Clearance adjustment		Automatic
Brake fluid			DOT3 or DOT4

Main Index
Group TOC

CONSTRUCTION DESCRIPTION

MASTER CYLINDER

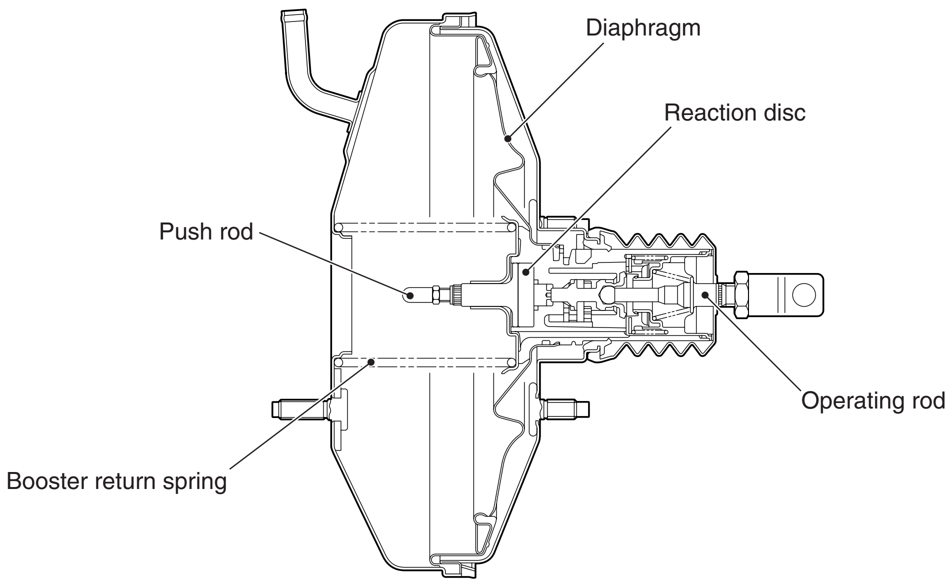
M2350001000509



The master cylinder is a tandem-type, with a structure that emphasizes safety.

BRAKE BOOSTER

M2350002000632

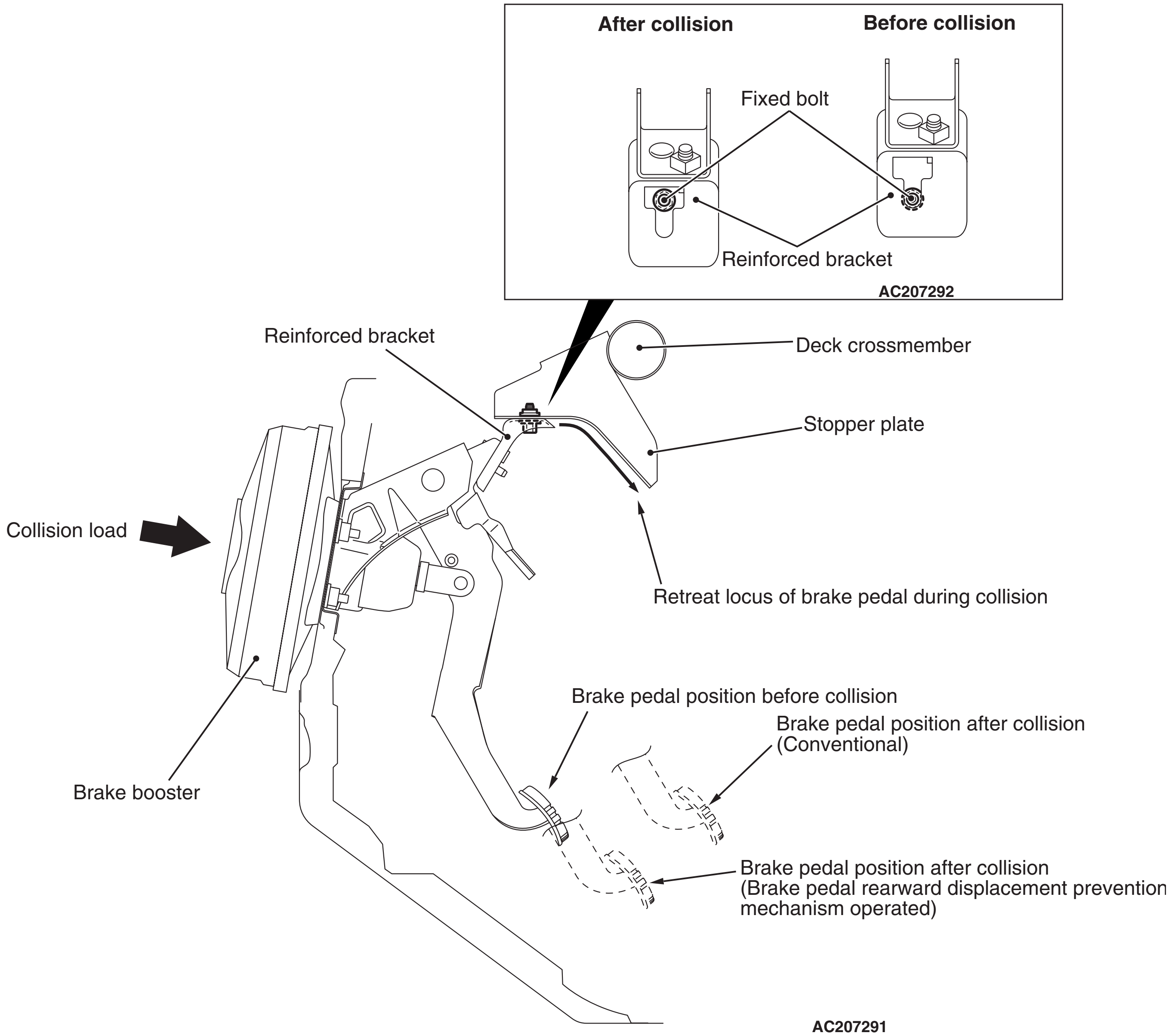


9-inch brake booster has been installed. The brake booster employs a variable amplification ratio mechanism that varies amplifications ratios so that even small pedal force can provide great breaking force.

Main Index
Group TOC

BRAKE PEDAL

M2350007000154



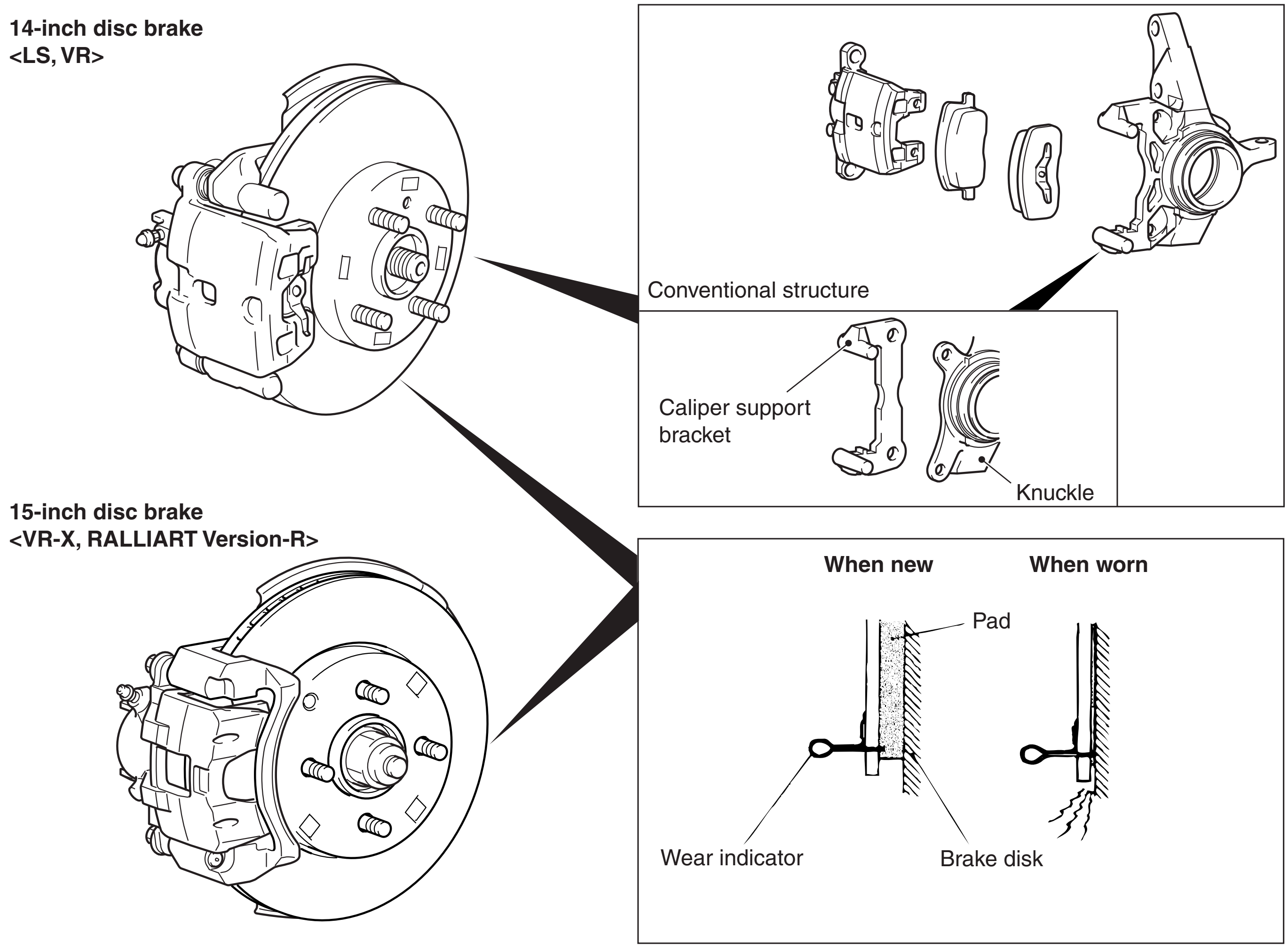
AC207749AE

The brake pedal rearward displacement prevention mechanism has been adopted in order to reduce the driver’s leg and foot injury during frontal collision.

The brake booster is forced to move backward according to retreating engine body during frontal collision and then the reinforced bracket is released from the stopper plate. After released, the reinforced bracket is forced to move backward and downward by guiding the rear end of the reinforced bracket along the stopper plate slope and it prevent the backward and upward displacement of the brake pedal.

FRONT BRAKE

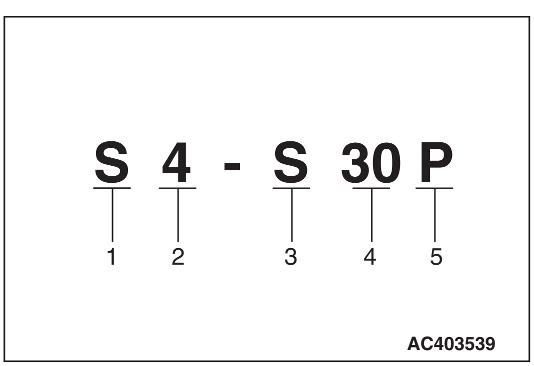
M2350003000538



AC403189AE

- Ventilated disc brake (V4–S51 or V5–S54) is installed.
- The calliper support bracket integrated with the knuckle has been installed, achieving weight reduction and optimising it for brake performance.
- Audible wear indicator that informs the driver of wear limit is installed to the inner brake pad. (Only left side)

DISC BRAKE DESIGNATION



AC403539

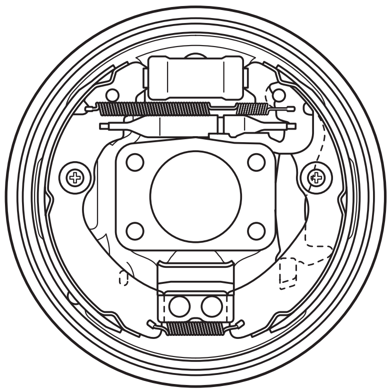
No.	Item	Content
1	Brake disc type	V: Ventilated
2	Brake size (Minimum applicable disc wheel)	4: 14-inch 5: 15-inch
3	No. of piston	S: 1piston (floating type)
4	Piston size (rounded to nearest integer)	30: ϕ 30 mm 34: ϕ 34 mm 51: ϕ 51 mm 54: ϕ 54 mm
5	Parking brake mechanism	P: Set

Main Index
Group TOC

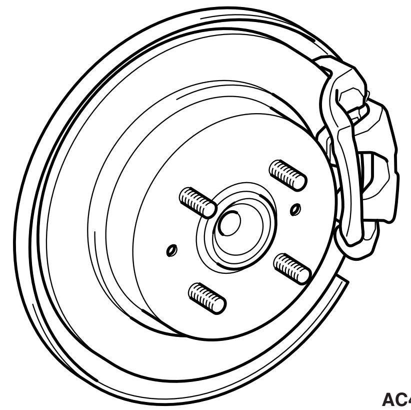
REAR BRAKE

M2350004000531

<8-inch leading trailing type drum brake>



<14-inch disc brake>



AC403060AD

- 8-inch leading trailing type drum brake, which assures stable braking force during forward or rearward movement, has been installed. <LS, VR>
- Disc brake (S4-S30P) has been installed. <VR-X, RALLIART Version-R>
- An audible wear indicator that informs the driver of application limit has been installed to the left brake pad. <VR-X, RALLIART Version-R>

NOTE: For disc brake designation, refer to P.35A-7.